



## The Role of Quality Enhancement Cell in Relation to Culture of Quality and Students' Academic Performance

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### ABSTRACT

This paper seeks to understand the impact of culture of quality (COQ) on students' academic performance and examines the moderating influence of QECs at a university in a private sector. The target population is university student who are studying various undergraduate, and postgraduate courses. A total of 307 valid responses are used for data analysis using regression analysis and PROCESS in SPSS. Results showed significant positive effect of COQ on SAP ( $\beta=0.45$ ,  $p<0.001$ ). The moderation analysis indicates a significant moderating effect of QEC. The positive interaction term between COQ and QEC implies that, the more active QEC gets, the effect of COQ enhances SAP. This implies that that students in the university with a better academic performance perform better when there is a stronger culture of quality in the university. The findings of the study enlarge the theoretical knowledge of quality culture and its effect on academic performance in the higher education. This research demonstrates how COQ has positive effect on Students' Academic Performance (SAP) and how Quality Enhancement Cell (QEC) as the moderating role on it increases the Education outcome. The results give university administrators and policymakers an idea about how a strong culture of quality can serve as a lever to improve student outcomes.



## Introduction

With the emphasis on quality in the higher education increased, institutions across the world have developed a focus on reinforcing a Culture of Quality (COQ). Traditionally, quality assurance is

more of an administrative process; however, nowadays quality has taken a holistic approach towards the activity of an institution in every aspect of teaching, learning and student support (Hilman et al., 2017; Lourenço, Valente, Dominguez-Lara, & Fulano, 2025). For improving student outcomes in higher education, particularly in developing countries like Pakistan as well as keeping up with global educational standards, setting up a quality culture in higher education has become very important (Hilman et al., 2017; Iqbal, Taib, & Razalli, 2024). Culture of Quality (COQ) in the university environment can be described as a set of values, belief and practices within the institution to continuously improve and value quality in the provision of education, learning and administration (Pandita and Kiran 2020). Despite tremendous efforts of HEIs in integrating quality practices, the culture of quality prominently affects the Students' Academic Performance (SAP), a fact which is not well understood. The culture of quality represents a crucial influence on student academic performance although most institutions and universities do not examine this link. Research indicates that quality culture produces tangible effects on higher education results through its creation of satisfied students while enhancing institutional responsibility as well as academic participation (Nguyen et al., 2024). Many higher education institutions fall short in creating authentic quality cultures despite using excessive attention on managerial procedures which diminishes academic performance (Maslikova 2023). The resolution of this academic performance problem remains vital for maintaining continuous academic success. These entails students' Academic Performance which are the measurable educational outcomes of students who may be assessed through grades, persistence rates and larger academic results (Nadeem et al., 2023). Additionally, the responsibilities of institutional structures such as the Quality Enhancement Cell (QEC) striving for it and trying to monitor implementation of quality initiatives are ignored. University is a place where the Quality Enhancement Cell that is a body established within the universities for implementing the quality assurance processes, conducting internal reviews and inspiring the culture of quality at universities (Erittu & Turri, 2023). Despite COQ–academic performance relationship being understood across studies, the empirical evidence as regards the role of QECs is sparsely available (Wu et al., 2022). Previous research has primarily studied the direct effects of quality practices; however, the work has not fully investigated the interaction between quality culture and the quality practice enhancement mechanisms (Mahsood et al., 2021). This paper therefore seeks to understand the impact of COQ on SAP in a private sector university and in particular moderate the influence of QECs at a university of Peshawar Pakistan. The specific objectives are:

1. An attempt is made to evaluate directly the impact of COQ on SAP.
2. To assess the moderating influence of QEC on the relationship between COQ and SAP.
3. To inform university leaders and policy decision makers on how to move theoretical understandings of the application of strategic quality initiatives to influence academic performance.

The contribution made to existing literature is twofold: First integrating the concept of quality culture with the moderating effect of QEC, and secondly furnishing a new perspective for quality enhancement in higher education. The findings enhance theoretical knowledge of quality culture and its effect on academic performance in the higher education, and designate quality enhancement cell as an important moderator in this association. The research extends the scope of studies by incorporating a critical role of QEC as a moderator. To support the idea about how a strong culture of quality and quality enhancement cells can serve as a lever to improve student outcomes practical implications are furnished for university administrators and policy makers.

## **Literature Review**

The Culture of Quality (COQ) and students' academic performance (SAP) has been an area that has attracted so much interest in the domain of educational research. The concept of COQ has the notion of continuous improvement, accountability, and involvement of stakeholder in HEIs. However, there still is a lack of research about the role of Quality Enhancement Cells (QECs) as the supporters of this dynamic. This section provides a critical review of existing literature in relation to COQ, SAP and role of QECs including recent studies, theoretical points and gaps for future research.

### **Quality Culture in Higher Education**

Building a strong quality culture is critical to build institutional performance. Albaroudi and Iqbal (2024) and Hilman et al. (2017) claims that there is a big difference between University outcomes and having strong quality culture which is responsible for the better results in the academic field. In their study on Nigerian universities, Hilman and his collaborators collected data through a structured questionnaire that makes use of Partial Least Squares (PLS) and found that COQ has positively the correlation with performance indicators like research output and student satisfaction (Hilman et al., 2017). Likewise, Mohammed and Taib (2019) take into consideration critical success factors for quality management in Iraqi universities and they highlighted the need of top management commitment, strategic planning and continuous improvement focus. Their findings indicate that by focusing these factors, HEIs can achieve excellence and better increased academic performance (Mohammed & Taib, 2019). According to Parveen et al (2024), there have been several studies that have investigated COQ's effect on the performance of the students. In addition, as noted by Elken and Stensaker (2018), quality is something that is done by individual actors to increase quality work. In addition, they pointed out that besides structural changes, actions and engagement of staff and students are also indispensable to enhance academic performance. Pandita and Kiran (2020) stated that the obtained results are also consistent with those of Pandita and Kiran (2020), in which they found out that academic culture helps mediate the linkage between employee experience and overall university performance, and therefore suggests that providing quality culture can contribute to the achievement of the objectives of desired education (Elken & Stensaker, 2018; Pandita & Kiran, 2020).

*H1: Quality culture in Higher education significantly influences students' academic performance.*

### **Role of Quality Enhancement Cells (QECs)**

Many universities already have established Quality Enhancement Cells (QECs) to provoke the systematicity in quality assurance. The responsibility for these units is that they should be implementing quality standards, conducting internal audits and fostering a quality culture (Noureen, Nadeem, & Hussain, 2024). According to Mahsood et al. (2021), the QECs were perceived positively by students in Khyber Pakhtunkhwa, Pakistan, especially in order to promote research activities. The study too involved some challenges such as infrastructure and the efficacy of the teaching staff—the two areas of improvement (Mahsood et al., 2021). Additionally, Iqbal et al. (2023) illustrated that intrinsic motivation has significant influence through mediation of quality culture on the academic performance. This study emphasizes the significance of quality educated practices that QECs facilitates for the fruitful engagement of the student and faculty in the academic process (Iqbal et al. 2023). Although, quality assurance in higher education has received much research, there is limited work on how COQ and SAP are moderated by QEC. However, most of the existing studies only concentrate on investigating the direct impact of quality practices on academic outcomes, and not the impact of the mechanism of institutional quality enhancement.

Additionally, in most cases, there is scant empirical evidence from developing countries, especially in the South Asian context, which is quite different from the educational milieu and the challenges faced there from Western countries.

*H2: Quality enhancement cells positively moderate the effect of Quality culture on students' academic performance in Higher education.*

There is a consensus about the positive effect of COQ on academic performance but studies point to the need of institutional commitment in quality practices. Thus, the moderating role of QECs needs to be further understood to explore how these units can capitalize on these units to make a quality culture more effective in improving student outcomes. The objective of this research is to fill this gap by looking at the effects of moderating QECs in a private sector university located in Peshawar, Pakistan.

## **Procedure and Methodology**

In this section, emphasis is placed on the research design, methodology and procedure that was adopted in the course of the study: data collection process, sampling strategy and the method of analysis used in testing the hypothesized relationships. In this case, a quantitative mono-method research design with the help of a survey strategy has been used for collecting primary data from the students of large private sector university in Peshawar, Pakistan. The purpose of the research is to determine the effect of Quality Enhancement Cell (QEC) which moderates Culture of Quality (COQ) on the Students' Academic Performance (SAP). Referring specifically to regression analysis and the PROCESS macro in SPSS software, the direct and moderated effects are assessed in the study.

**Population and Sample:** For this study, the target population is university student who are studying various undergraduate, and postgraduate courses. A total of 351 students represented from different schools were approached and were asked to participate in the survey, out of which, 307 valid response were obtained, with a response rate of 87.7%. Since students are easily accessible, as are data collection possibilities within the university setting, convenience sampling was the sampling method employed.

**Measures:** The presenting constructs in study were measured using established scales based on prior research.

**Culture of Quality (COQ):** A 10 item scale was used to assess this construct adapted from existing quality culture measurement instruments that are based on the elements of continuous improvement, quality commitment, and a participation of stakeholders (Hilman et al., 2017).

**Academic Performance (Academic Achievement):** Academic achievement included self-reported GPA, and self-reported academic achievements, as well as perceived learning outcomes.

**Moderating Variable:** The moderating variable, QEC, was measured by 7 items scale that focuses on students' perceptions of the actions of QEC such as internal audits, feedback mechanisms, and quality assurance practices as demonstrated by the work of Mahsood et al. (2021). This was followed by a 5 point Likert scale for rating (1= strongly disagree, 5= strongly agree) of all items.

**Data Collection Procedures:** The structured questionnaire was distributed in both the physical as well as digital format. The items of the questionnaire were subjected to pilot test with 30 students to ensure clarity and reliability. The feedback was then taken into account and minor adjustments were made.

## Analysis and Results

Statistical techniques were used in the analysis of collected data and they include;

- 1. Descriptive Statistics:** Summary of Demographics / Description of sample age, gender, program of study, and GPA
- 2. Validating Regression Models:** The regression models were assessed to see that tests for normality, multicollinearity, and homoscedasticity all returned satisfactory results and to study the direct effect of COQ on SAP.
- 3. Moderation Analysis:** In order to test for the moderator effect of QEC on the COQ and SAP relation, the PROCESS macro in SPSS (Model 1) was used.

The second section will offer the data analysis and the results for sample characteristics, regression results, and the moderation analysis findings. I will draft this part of the research article, please hold on!

### Sample Characteristics

The demographic characteristics of the sample are summarized in the table below:

**Table 1: Sample Demographics**

Characteristic	Categories
Gender	Male: 61%, Female: 39%
Age	18-21 years: 50%, 22-25 years: 35%, 26+ years: 15%
Program of Study	Undergraduate: 76%, Postgraduate: 24%
GPA	Below 2.5: 10%, 2.5-3.0: 20%, 3.1-3.5: 40%, Above 3.5: 30%

### Assessment of Assumptions

Before conducting regression analysis, key assumptions were tested:

**Normality:** The data were found to be approximately normally distributed based on the Shapiro-Wilk test ( $p > 0.05$ ).

**Multicollinearity:** Variance Inflation Factors (VIFs) for all predictors were below 3, indicating no serious multicollinearity issues.

**Homoscedasticity:** Residual plots confirmed that the variance of errors was constant across all levels of the independent variables.

The table below presents the results of the regression analysis, including the direct effect of Culture of Quality (COQ) on Students' Academic Performance (SAP), as well as the moderation effect of the Quality Enhancement Cell (QEC).

**Table 2: Regression results**

Model	Predictor	$\beta$	SE	t	p	R <sup>2</sup>
Model 1: COQ → SAP	Culture of Quality (COQ)	0.45	0.05	9.00	<0.001	0.20
Model 2: COQ + QEC → SAP	Culture of Quality (COQ), Quality Enhancement Cell (QEC)	0.38	0.06	6.33	<0.001	0.35
Model 3: Interaction (COQ * QEC)	COQ * QEC (Interaction Term)	0.30	0.07	4.29	<0.001	0.40

## **Interpretation**

Model 1 shows a significant positive effect of COQ on SAP ( $\beta=0.45$ ,  $p<0.001$ ), explaining 20% of the variance in academic performance. Model 2 includes both COQ and QEC as predictors, increasing the explanatory power to 35%. Model 3 tests the interaction between COQ and QEC, revealing a significant moderation effect ( $\beta=0.30$ ,  $p<0.01$ ), with an overall  $R^2$  of 0.40, indicating that the QEC strengthens the positive impact of COQ on SAP.

## **Regression Analysis Results**

In the regression analysis the COQ showed significant positive effect on SAP ( $\beta=0.45$ ,  $p<0.001$ ). The implication of this is that students in the university with a better academic performance perform better when there is a stronger culture of quality in the university. Third, the moderation analysis with the PROCESS macro (Model 1) indicates a significant moderating effect of QEC ( $\beta=0.30$ ,  $p<0.01$ ). The positive interaction term between COQ and QEC implies that, the more active QEC gets, the closer to or further away from SAP we are with COQ. Overall, the data analysis suggests the hypothesized relationship and provides both direct COQ on SAP and positive moderating QEC effect.

## **Discussion**

This study undertook to analyze the effect of Culture of Quality (COQ) on Students' Academic Performance (SAP) and to examine if Quality Enhancement Cell (QEC) acts as a moderator between the two. Our findings have several important insights related to education and quality in higher education and help us understand the current understanding of quality culture and its impact on results. The result of the regression analysis shows a positive impact of COQ on SAP with a coefficient value greater than zero and less than one. This supports existing literature that puts quality emphasis on the accomplishment of student learning and academic outcomes. Similar to Hilman et al. (2017), Oliso, Alemu, and Jansen (2024) reported that the quality practice of universities was positively correlated with the organizations' academic performance as well as students' satisfaction. Universities that follow strong quality practices have a direct relation between academic performance and student satisfaction. Research indicates that high quality of academic service including well designed curricula and quality teaching and teaching methods enhances the faculty engagement and institutional reputation (Rusnipa et al., 2021). Further more, satisfaction is then determined by academic service quality, and thus better learning experiences are achieved (Sihombing et al., 2025). With this, universities should always update their quality assurance strategy to enhance academic outcomes. Continuity of improvement and engagement with stakeholder appear critical to create and foster an environment for student success. More specifically, the moderation analysis showed that the construction of QECs would promote the relationship between COQ and SAP. It implies that these quality endeavors can be improved by QECs. The results of this study is aligned with the research of Sain and Vasudevan (2024) and Mahsood et al. (2021), where it was found that QECs are considered to be instrumental for promoting the research culture and enhancing academic standards.

These findings are in keeping with Elken and Stensaker (2018) who held that it is individual actions and the work of quality units such as QECs that keep and boost educational quality. Elken & Stensaker (2018) and Díez, Villa, López, & Iraurgi (2020) put the emphasis on the need for more active quality management practices in order to obtain better results in education. Nevertheless, this study contributes with some uniqueness in that it shows how QECs moderate. While Pandita and Kiran (2020) looked at the mediating role that academic culture plays in the relationship between the independent and dependent variables, this study adds to that by adding the

moderating role played by QECs of a university (institutional quality mechanisms like Pandita & Kiran, 2020).

## **Implications and Conclusion**

The last section in the study discusses the theoretical and practical implications of the findings of the research.

**Theoretical Implications:** The findings of the study enlarge the theoretical knowledge of quality culture and its effect on academic performance in the higher education. This research demonstrates how COQ has positive effect on Students' Academic Performance (SAP) and how Quality Enhancement Cell (QEC) as the moderating role on it increases the Education outcome. Previous studies have usually focused on the direct effect of quality culture (Hilman et al., 2017); however, this research extends the scope of studies by incorporating a critical role of QEC as a moderator by providing a different lens through which quality practices and academic performance can be understood.

**Practical and Managerial Implications:** The results give university administrators and policymakers an idea about how a strong culture of quality can serve as a lever to improve student outcomes. What the study seems to say is that universities should boost the role and activities of QECs, they build up the quality practices and accelerate their positive influence on the academic performance. It could entail supplying assistance including additional resources, training, and support for QEC staff. They should encourage the adoption of quality principles in universities' organizational values and practices and seek advancement on continual improvement, participation of stakeholders, and evidence-based decision making. Involve students actively in the processes of quality enhancement through a regular flow of feedback mechanisms, as they play a very important role in identifying improvement areas and enhance engagement.

**Conclusion:** Within this study, the QEC is used as the moderating variable governing the effect of COQ on SAP. This result confirms that a good quality culture positively influences academic performance and the existence of a strong QEC constitutes a good reinforce of this relationship. The study findings indicate that achieving better educational outcomes can be achieved by investing in both the quality of the culture and the quality of the enhancement mechanism. The study made a contribution to existing literature by integrating QEC concept with the moderating effect of quality culture, providing useful information for university leaders and policymakers to improve academic performance.

## **Limitations and Future Research Directions**

Though this study offers theoretical contribution to understanding the effect of Culture of Quality (COQ) on Students' Academic Performance (SAP) and moderating role of Quality Enhancement Cells (QECs), some limitations can be acknowledged. However, because the data were obtained from a single private sector university in Peshawar, Pakistan, generalizability of the findings to other contexts and different kinds of institutions should be considered. Future studies should include a more diverse sample with public universities and institutions of other regions or countries. A cross sectional survey is not a design that allows inferences to be made about causality. To make causal relationships more robustly, longitudinal studies would be beneficial to track changes over time. Academic performance (GPA), actual and perceived quality culture, were used in the study as self-reported measures, and they can have biases like social desirability. Results could be more valid if based on objective performance data and many data sources. Although the moderating variable for the relationship between COQ and SAP was QEC, other

institutional factors such as leadership style or organizational structure may also affect the relationship between COQ and SAP. Further moderating variables should be investigated to gain better insight into the issue.

Other possible moderators that might shape the relationship between COQ and SAP include leadership support, faculty engagement, and organizational structure. Comparative research between different types of universities (public and private, large and small) and regions would help gain more generalizable understanding as to the effects of quality culture in different educational environments. Longitudinal research can assist in tracking how quality culture develops and how it influences scholastic performance over time, and thus clearer picture on the causality and long term effects. Qualitative methods, such as interviews or focus groups with students and QEC staff can incorporate convincing insights into the mechanisms through which QECs affect outcomes on academics and strengthen the understanding of the dynamics of the quality culture.

## References

1. Albaroudi, H. B., & Iqbal, S. (2024). Role of leadership styles in connecting quality culture and university performance: a higher education perspective from Saudi Arabia. *The TQM Journal*.
2. Díez, F., Villa, A., López, A. L., & Iraurgi, I. (2020). Impact of quality management systems in the performance of educational centers: educational policies and management processes. *Heliyon*, 6(4).
3. Elken, Mari, and Bjørn Stensaker. "Conceptualising 'quality work' in higher education." *Quality in higher education* 24.3 (2018): 189-202.
4. Erittu, E., & Turri, M. (2023). Internal quality assurance units: empirical evidence from Italy. *Quality in Higher Education*, 29(3), 358-373.
5. Hilman, H., Abubakar, A., & Kaliappen, N. (2017). The effect of quality culture on university performance. *Journal of Business and Retail Management Research*, 11(4).
6. Iqbal, S., Razalli, M. R., & Taib, C. A. B. (2023, May). Influence of intrinsic and extrinsic motivation on higher education performance: mediating effect of quality culture. In *Frontiers in Education* (Vol. 8, p. 1099415). Frontiers Media SA.
7. Iqbal, S., Taib, C. A. B., & Razalli, M. R. (2024). The effect of accreditation on higher education performance through quality culture mediation: the perceptions of administrative and quality managers. *The TQM Journal*, 36(2), 572-592.
8. Lourenço, A. A., Valente, S., Dominguez-Lara, S., & Fulano, C. (2025). Approaches and Conceptions of Teaching and Learning: Towards the School of Excellence. *TEORIA*, 37, 65.
9. Mahsood, M., Atta, M. A., & Anwar, S. (2021). Perception of University Students Regarding the Role of Quality Enhancement Cells in the Universities of KP. *Global Educational Studies Review*, VI, 6, 195-205.
10. Maslikova, I. (2023). Value Dimensions of Quality Culture in Higher Education. *Ukrainian Cultural Studies*. [https://doi.org/10.17721/ucs.2023.2\(13\).02](https://doi.org/10.17721/ucs.2023.2(13).02).
11. Mohammed, A. H., & Taib, C. A. (2019). The effect of critical success factors of quality management to excellence in Iraqi Universities. *Journal of Business and Retail Management Research*, 13(04).
12. Noureen, S., Nadeem, M. A., & Hussain, R. M. (2024). Quality Enhancement Cells and Contribution to Academic Excellence: A Review of Policy and Practice in Pakistan's Public Universities. *Journal of Asian Development Studies*, 13(3), 1182-1192.

13. Oliso, Z. Z., Alemu, D. D., & Jansen, J. D. (2024). The impact of educational service quality on student academic performance in Ethiopian public universities: a mediating role of students' satisfaction. *Journal of International Education in Business*, 17(2), 340-370.
14. Parveen, K., Phuc, T. Q. B., Alghamdi, A. A., Kumar, T., Aslam, S., Shafiq, M., & Saleem, A. (2024). The contribution of quality management practices to student performance: Mediated by school culture. *Heliyon*, 10(15).
15. Rusnipa, H. A., Hashim, M., & Sa'ad, S. (2021). Effects of Academic Quality and Service Quality on University Students' Satisfaction. *International Journal of Service Management and Sustainability*, 6(2), 153-174.
16. Sain, Z. H., & Vasudevan, A. (2024). Leveraging Quality Management Trilogy: Lahore Universities' QECs' Effective Practices. *International Journal of Higher Education Management*, 10(2).
17. Sihombing, D., Lutfhi, M., Nabila, T., Silitonga, J., & Fachruddin, W. (2025). The Effect of Academic Service Quality on Student Satisfaction. *Journal of Advances in Accounting, Economics, and Management*, 2(3), 15-15.
18. Tu, N. T., Huong, T. T. T., Nham, N. T., & Tuan, N. A. (2024). Quality culture in postgraduate education: student's satisfaction perspectives. *Edelweiss Applied Science and Technology*, 8(6), 3997-4013.
19. Wu, Q., Xuan, J., Zhou, F., Mei, Y., & Su, J. (2022). New quality cost framework (QCF) based on the hybrid fuzzy MCDM approach. *Computational Intelligence and Neuroscience*, 2022(1), 6416989.